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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,948	02/13/2002	Nicolae Miron	086112-173-NP	6968
24964	7590	02/17/2004	EXAMINER	
GOODWIN PROCTER L.L.P 103 EISENHOWER PARKWAY ROSELAND, NJ 07068			CONNOLLY, PATRICK J	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/074,948	Applicant(s) MIRON, NICOLAE	
	Examiner Patrick J Connolly	Art Unit 2877	<i>aw</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,119,024 to Popovich et al (hereafter Popovich) in further view of U.S. Patent No. 3,302,027 to Fried et al (hereafter Fried).

As to claim 1, Popovich teaches an apparatus including (see Figures 4 and 5):

at least one translation plate (23);

at least one flexure element for mounting said plate (21);

a first mirror mounted to said plate (7);

a second mirror in optical communication with said first mirror (6); and

a piezo-electric actuator (see column 7, lines 10-15).

Popovich does not teach the incorporation of a frame, compensation screw, or piezo-ceramic actuators.

With further regard to claim 1, Fried teaches an interferometric device including (see Figure 1):

a frame in the form of a rigid box-shaped casing (see column 9, lines 30-35);

a coarse adjustment screw or compensation screw for adjustments (see column 5, lines 10-30); and

piezo-ceramic actuators (see column 5, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the frame of Fried with the device of Popovich so as to achieve the advantage of stability.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the screw of Fried with the device of Popovich so as to achieve the advantage the ability to coarsely adjust the device.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the piezo-ceramic actuators of Fried with the device of Popovich, as they are well known substitutes for piezo-electric actuators (as Fried teaches, see column 5, lines 24-29).

As to claim 2, Popovich teaches a second translation plate and a second flexure element (see Figure 5: 31, 32).

As to claim 3, it would have been obvious to one of ordinary skill in the art at the time of invention to combine a second screw of Fried with the device of Popovich so as to achieve the advantage of the ability to coarsely adjust the device.

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As to claim 4, Fried teaches multiple actuators in combination with the mirrors. It would have been obvious to one of ordinary skill in the art at the time of invention to include multiple piezo-ceramic actuators so as to achieve a finer level of tuning between the mirrors.

As to claims 5 and 6, while neither Fried nor Popovich teach a spherical element interposed between the actuator and translation plate, it would have been obvious to one of ordinary skill in the art at the time of invention to include an intermediate element between these elements in order to increase flexibility.

As to claims 7, 8 and 16, Fried teaches a closed-loop position sensing system for adjusting the distance between mirrors (see column 8 lines 65-75 and column 9, lines 1-20).

As to claim 9, Popovich teaches a light input port (35) and a light output port (34) (see Figure 5).

As to claim 10, Popovich teaches a light source (Figure 1, 4).

As to claim 11, Popovich teaches a light collector (Figure 1, 1).

As to claims 12-15, Popovich teaches the use of fibers to transport light from the device. While Popovich does not teach the use of couplers specifically, the use of fiber optic tap couplers to couple devices, light sources and detectors is notoriously well known in the art and it would have been obvious to one of ordinary skill in the art at the time of invention to include these in order to transport light effectively.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Connolly whose telephone number is 571.272.2412.

The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0956.

pjcPTL
01-28-2004



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800